

**IN THE CLAIMS**

**This listing of the claims replaces all prior versions of the claims in the application.**

**Listing of the Claims**

1. (Original.) An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:
  - a) a polypeptide comprising an amino acid sequence of SEQ ID NO:1,
  - b) a naturally occurring polypeptide comprising an amino acid sequence at least 90% identical to an amino acid sequence of SEQ ID NO:1,
  - c) a biologically active fragment of a polypeptide having an amino acid sequence of SEQ ID NO:1, and
  - d) an immunogenic fragment of a polypeptide having an amino acid sequence of SEQ ID NO:1.
2. (Original.) An isolated polypeptide of claim 1, having a sequence of SEQ ID NO:1.
3. (Original.) An isolated polynucleotide encoding a polypeptide of claim 1.
4. (Original.) An isolated polynucleotide encoding a polypeptide of claim 2.
5. (Original.) An isolated polynucleotide of claim 4, having a sequence of SEQ ID NO:2.
6. (Original.) A recombinant polynucleotide comprising a promoter sequence operably linked to a polynucleotide of claim 3.
7. (Original.) A cell transformed with a recombinant polynucleotide of claim 6.
8. (Original.) A transgenic organism comprising a recombinant polynucleotide of claim 6.

9. (Original.) A method for producing a polypeptide of claim 1, the method comprising:
- a) culturing a cell under conditions suitable for expression of the polypeptide, wherein said cell is transformed with a recombinant polynucleotide, and said recombinant polynucleotide comprises a promoter sequence operably linked to a polynucleotide encoding the polypeptide of claim 1, and
  - b) recovering the polypeptide so expressed.
10. (Original.) A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:1.
11. (Original.) An isolated antibody which specifically binds to a polypeptide of claim 1.
12. (Original.) An isolated polynucleotide comprising a sequence selected from the group consisting of:
- a) a polynucleotide comprising a polynucleotide sequence of SEQ ID NO:2,
  - b) a naturally occurring polynucleotide comprising a polynucleotide sequence at least 90% identical to a polynucleotide sequence of SEQ ID NO:2,
  - c) a polynucleotide having a sequence complementary to a polynucleotide of a),
  - d) a polynucleotide having a sequence complementary to a polynucleotide of b) and
  - e) an RNA equivalent of a)-d).
13. (Original.) An isolated polynucleotide comprising at least 60 contiguous nucleotides of a polynucleotide of claim 12.
14. (Original.) A method for detecting a target polynucleotide in a sample, said target polynucleotide having a sequence of a polynucleotide of claim 12, the method comprising:
- a) hybridizing the sample with a probe comprising at least 20 contiguous nucleotides comprising a sequence complementary to said target polynucleotide in the sample, and which probe specifically hybridizes to said target polynucleotide, under conditions

whereby a hybridization complex is formed between said probe and said target polynucleotide or fragments thereof, and

- b) detecting the presence or absence of said hybridization complex, and, optionally, if present, the amount thereof.

15. (Original.) A method of claim 14, wherein the probe comprises at least 60 contiguous nucleotides.

16. (Original.) A method for detecting a target polynucleotide in a sample, said target polynucleotide having a sequence of a polynucleotide of claim 12, the method comprising:

- a) amplifying said target polynucleotide or fragment thereof using polymerase chain reaction amplification, and
- b) detecting the presence or absence of said amplified target polynucleotide or fragment thereof, and, optionally, if present, the amount thereof.

17. (Original.) A composition comprising a polypeptide of claim 1 and a pharmaceutically acceptable excipient.

18. (Original.) A composition of claim 17, wherein the polypeptide has an amino acid sequence of SEQ ID NO:1.

19. (Original.) A method for treating a disease or condition associated with decreased expression of functional leptin receptor gene-related protein (LRGRP), comprising administering to a patient in need of such treatment the composition of claim 17.

20. (Original.) A method for screening a compound for effectiveness as an agonist of a polypeptide of claim 1, the method comprising:

- a) exposing a sample comprising a polypeptide of claim 1 to a compound, and
- b) detecting agonist activity in the sample.

21. - 22. (Canceled.)

23. (Original.) A method for screening a compound for effectiveness as an antagonist of a polypeptide of claim 1, the method comprising:

- a) exposing a sample comprising a polypeptide of claim 1 to a compound, and
- b) detecting antagonist activity in the sample.

24. - 25. (Canceled.)

26. (Original.) A method of screening for a compound that specifically binds to the polypeptide of claim 1, the method comprising:

- a) combining the polypeptide of claim 1 with at least one test compound under suitable conditions, and
- b) detecting binding of the polypeptide of claim 1 to the test compound, thereby identifying a compound that specifically binds to the polypeptide of claim 1.

27. (Original.) A method of screening for a compound that modulates the activity of the polypeptide of claim 1, said method comprising:

- a) combining the polypeptide of claim 1 with at least one test compound under conditions permissive for the activity of the polypeptide of claim 1,
- b) assessing the activity of the polypeptide of claim 1 in the presence of the test compound, and
- c) comparing the activity of the polypeptide of claim 1 in the presence of the test compound with the activity of the polypeptide of claim 1 in the absence of the test compound, wherein a change in the activity of the polypeptide of claim 1 in the presence of the test compound is indicative of a compound that modulates the activity of the polypeptide of claim 1.

28. (Original.) A method for screening a compound for effectiveness in altering expression of a target polynucleotide, wherein said target polynucleotide comprises a polynucleotide sequence of claim 5, the method comprising:

- a) exposing a sample comprising the target polynucleotide to a compound, under conditions suitable for the expression of the target polynucleotide,
- b) detecting altered expression of the target polynucleotide, and
- c) comparing the expression of the target polynucleotide in the presence of varying amounts of the compound and in the absence of the compound.

29. (Original.) A method for assessing toxicity of a test compound, the method comprising:

- a) treating a biological sample containing nucleic acids with the test compound,
- b) hybridizing the nucleic acids of the treated biological sample with a probe comprising at least 20 contiguous nucleotides of a polynucleotide of claim 12 under conditions whereby a specific hybridization complex is formed between said probe and a target polynucleotide in the biological sample, said target polynucleotide comprising a polynucleotide sequence of a polynucleotide of claim 12 or fragment thereof,
- c) quantifying the amount of hybridization complex, and
- d) comparing the amount of hybridization complex in the treated biological sample with the amount of hybridization complex in an untreated biological sample, wherein a difference in the amount of hybridization complex in the treated biological sample is indicative of toxicity of the test compound.

30. - 45. (Canceled.)

46. A microarray wherein at least one element of the microarray is a polynucleotide of claim 13.

47. (Canceled.)

48. (Original.) An array comprising different nucleotide molecules affixed in distinct physical locations on a solid substrate, wherein at least one of said nucleotide molecules comprises a first oligonucleotide or polynucleotide sequence specifically hybridizable with at least 30 contiguous nucleotides of a target polynucleotide, and wherein said target polynucleotide is a polynucleotide of claim 12.

49.- 55. (Canceled.)

56. (Original.) A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:1.

57. (Original.) A polynucleotide of claim 12, comprising the polynucleotide sequence of SEQ ID NO:2.